**Tests for identifying Organic substances**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **water** | **Na2CO3 (aq)** | **Mg or Zn** | **conc NaOH or HCl** | **Br2 (aq)** | **acidified**  **MnO4-** | **acidified**  **Cr2O7 2-** | **Universal indicator** | **litmus paper** |
| **alkane** | | immiscible, alkane floats on top, two different layers are visible | immiscible, alkane floats on top, two different layers are visible |  |  | orange 🡪 colourless after 10 mins if left in light  substitution reaction  2 products formed  1 is HBr  the other is 1-bromoalkane |  |  |  |  |
| **alkene** | | immiscible, alkene floats on top, two different layers are visible | immiscible, alkene floats on top, two different layers are visible |  |  | orange 🡪 colourless  immediately  addition reaction  immediate reaction  1 product formed which is a dibromoalkane | purple 🡪 colourless  oxidation reaction  diol formed |  |  |  |
| **alcohol** (primary & secondary) | | soluble  (up to 5 carbon atoms in chain length) | soluble  (up to 5 carbon atoms in chain length) |  |  |  | purple 🡪 colourless  oxidation reaction  carboxylic acid formed | oxidation reaction  orange 🡪 green  carboxylic acid | green as neutral |  |
| **carboxylic acid** | | soluble  (up to 5 carbon atoms in chain length) | bubbling  salt, water and **carbon dioxide** formed | bubbling as salt, water and **hydrogen** gas formed | neutralisation reaction  acids that are insoluble in water will be soluble in  **6M NaOH** as acids react to form the sodium salt of the acid |  |  |  | orange or **yellow** as acidic | blue litmus turns red |
| **amine** | | soluble  (up to 5 carbon atoms in chain length) | soluble  (up to 5 carbon atoms in chain length) |  | neutralisation reaction  amines that are insoluble in water will be soluble in ­**6M HCl** as amines react to form ammonium chloride salt |  |  |  | blue as basic | red litmus turns blue |

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